# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 09/696,566 | 10/25/2000 | Richard H. Boivie | YOR920000591US1 | 2909 |

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FLEIT, KAIN, GIBBONS, GUTMAN, BONGINI
& BIANCO P.L.
ONE BOCA COMMERCE CENTER
551 NORTHWEST 77TH STREET, SUITE 111
BOCA RATON, FL 33487

| EXAMINER |
|---|
| TRAN, PHILIP B |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2155 | |

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/696,566 | BOIVIE, RICHARD H. |
| | Examiner | Art Unit |
| | Philip B Tran | 2155 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>25 October 2000</u>.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Specification*

1.      The disclosure is objected to because of the following informalities: on page 1,

the text of "cross-reference to related applications" section (Lines 12-18) should be

updated with current status of the cited applications such as U.S. Patent Serial No.

Appropriate correction is required.

### *Double Patenting*

2.      The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees.  See *In re Goodman*, 11
F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA
1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*,
418 F.2d 528, 163 USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be
used to overcome an actual or provisional rejection based on a nonstatutory double
patenting ground provided the conflicting application or patent is shown to be commonly
owned with this application.  See 37 CFR 1.130(b).
        Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer.  A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

3.      Claims 8-9, 11-14 and 16 of the instant application are rejected under the

judicially created doctrine of obviousness-type double patenting as being unpatentable

over some claims of Boivie et al (Hereafter, Boivie), U.S. Patent No. 6,625,773 in view

of Hadjono, U.S. Patent No. 6,587,943. Although the conflicting claims are not identical,

they are not patentably distinct from each other because modifications are obvious.

        Regarding claim 8, claim 1 of Boivie recites all limitations in claim 8 of the instant

application [see Boivie, Col. 8, Lines 18-37]. Claim 1 of Boivie does not explicitly teach

distributing electronic mail message across the network using multicast technique. However, Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 9, claim 1 of Boivie recites all limitations in claim 9 of the instant application [see Boivie, Col. 8, Lines 18-37]. Claim 1 of Boivie does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate

multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 11, claim 1 of Boivie recites all limitations in claim 11 of the instant application [see Boivie, Col. 8, Lines 13-17]. Claim 1 of Boivie does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and

bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 12, claim 1 of Boivie recites all limitations in claim 12 of the instant application [see Boivie, Col. 8, Lines 7-10]. Claim 1 of Boivie does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 13, claim 35 of Boivie recites all limitations in claim 13 of the instant application [see Boivie, Col. 12, Lines 1-4 and Col. 12, Lines 15-25]. Claim 35 of Boivie does not explicitly teach distributing electronic mail message across the network

using multicast technique. However, Hardjono, in the same field of messages/packets

multicasting endeavor, discloses multicasting technique is well-known in the art for

transmitting data messages such as e-mail messages to selected groups of users

across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It

would have been obvious to one of ordinary skill in the art at the time of the invention

was made to incorporate multicasting technique for e-mail messages, disclosed by

Hadjono, into the transmission of multicast messages/packets across the network of

information processing units and intermediate nodes disclosed by Haggerty, in order to

allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1,

Lines 13-25]. Thus, it would offer cost savings in network resources since network

processing and bandwidth are conserved by transmitting a single copy of

messages/packets over a distribution tree that branches out to destinations across the

network.


Regarding claim 14, claim 35 of Boivie recites all limitations in claim 14 of the

instant application [see Boivie, Col. 12, Lines 31-34]. Claim 35 of Boivie does not

explicitly teach distributing electronic mail message across the network using multicast

technique. However, Hardjono, in the same field of messages/packets multicasting

endeavor, discloses multicasting technique is well-known in the art for transmitting data

messages such as e-mail messages to selected groups of users across the network like

the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been

obvious to one of ordinary skill in the art at the time of the invention was made to

incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 16, claim 35 of Boivie recites all limitations in claim 14 of the instant application [see Boivie, Col. 12, Lines 7-12]. Claim 35 of Boivie does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and

bandwidth are conserved by transmitting a single copy of messages/packets over a

distribution tree that branches out to destinations across the network.

Each of the patent claims of Boivie et al (Hereafter, Boivie), U.S. Patent No.

6,625,773 is narrower than claims in the instant application. It would have been obvious

to a person of ordinary skill in the art at the time of the invention was made to omit

elements when the remaining elements perform as before. A person of ordinary skill

could have arrived at the present claims by omitting the details of the patent claims. **See**

**In re Karlson (CCPA) 136 USPQ 184**, decided January 16, 1963 (*"Ommision of*

*element and its function in combination is obvious expedient if remaining elements*

*perform same functions as before"*).

### *Claim Rejections - 35 USC § 103*

4.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.     Claims 1, 3, 6, 8, 10, 13-15 and 17-19 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Haggerty et al (Hereafter, Haggerty), U.S. Pat. No. 6,331,983

in view of Hardjono, U.S. Pat. No. 6,643,773.

Regarding claim 1, Haggerty teaches a method for distributing packets or

messages efficiently across a network of information processing units (= Mcast Hosts)

and intermediate nodes (= Mcast Routers/Switches) (i.e., multicasting packets across

switch/router networks) [see Figs. 2-5 and Abstract], the method on an information

processing unit comprising the steps of :

receiving a message created by a user with a list of destinations (i.e., receiving

multicast packet with destination IP address of a multicast group) [see Col. 11, Line 60

to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12]; and

sending a single copy of the message across the network via intermediate nodes

to addresses corresponding to the list of destinations (i.e., copying an incoming

multicast packet onto each of its going tree links) [see Col. 6, Lines 12-22 and Col. 13,

Lines 36-45] using a reliable multicast technique (i.e., reliable delivery of multicast

packets/messages with acknowledgment) [see Col. 17, Lines 30-64].

Haggerty does not explicitly teach distributing electronic mail message across the

network using multicast technique. However, Haggerty does suggest the use of

multicasting in transmission of messages/packets over the Internet such as

transmission of corporate messages to employees and video/audio conferencing [see

Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages

involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor,

discloses multicasting technique is well-known in the art for transmitting data messages

such as e-mail messages to selected groups of users across the network like the

Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to

one of ordinary skill in the art at the time of the invention was made to incorporate

multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission

of multicast messages/packets across the network of information processing units and

intermediate nodes disclosed by Haggerty, in order to allow more users to easily create

and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer

cost savings in network resources since network processing and bandwidth are

conserved by transmitting a single copy of messages/packets over a distribution tree

that branches out to destinations across the network.


Regarding claim 3, Haggerty teaches an information processing unit for

distributing packets or messages efficiently across a network of information processing

units (= Mcast Hosts) and intermediate nodes (= Mcast Routers/Switches) (i.e.,

multicasting packets across switch/router networks) [see Figs. 2-5 and Abstract], the

information processing unit comprising :

a reception unit for receiving a message with addresses corresponding to a list of

destinations (i.e., receiving multicast packet with destination IP address of a multicast

group) [see Col. 11, Line 60 to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12];

and

a transmission unit for sending a single copy of the mail message across the

network via intermediate nodes to addresses corresponding to the list of destinations

(i.e., copying an incoming multicast packet onto each of its going tree links) [see Col. 6,

Lines 12-22 and Col. 13, Lines 36-45] using a reliable multicast technique (i.e., reliable

delivery of multicast packets/messages with acknowledgment) [see Col. 17, Lines 30-64].

Haggerty does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Haggerty does suggest the use of multicasting in transmission of messages/packets over the Internet such as transmission of corporate messages to employees and video/audio conferencing [see Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 6, Haggerty further teaches a computer readable medium including instructions for distributing packets or messages efficiently across a network of information processing units (= Mcast Hosts) and intermediate nodes (= Mcast Routers/Switches) (i.e., multicasting packets across switch/router networks) [see Figs. 2-5 and Abstract], the computer readable medium comprising instructions for :

receiving a message with addresses corresponding to a list of destinations (i.e., receiving multicast packet with destination IP address of a multicast group) [see Col. 11, Line 60 to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12]; and

sending the message across the network via intermediate nodes to the addresses corresponding to the list of destinations (i.e., copying an incoming multicast packet onto each of its going tree links) [see Col. 6, Lines 12-22 and Col. 13, Lines 36-45] using a reliable multicast technique (i.e., reliable delivery of multicast packets/messages with acknowledgment) [see Col. 17, Lines 30-64].

Haggerty does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Haggerty does suggest the use of multicasting in transmission of messages/packets over the Internet such as transmission of corporate messages to employees and video/audio conferencing [see Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the

Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to

one of ordinary skill in the art at the time of the invention was made to incorporate

multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission

of multicast messages/packets across the network of information processing units and

intermediate nodes disclosed by Haggerty, in order to allow more users to easily create

and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer

cost savings in network resources since network processing and bandwidth are

conserved by transmitting a single copy of messages/packets over a distribution tree

that branches out to destinations across the network.


Regarding claim 8, Haggerty teaches a method for distributing packets or

messages across a network of information processing units (= Mcast Hosts) and

intermediate nodes (= Mcast Routers/Switches) (i.e., multicasting packets across

switch/router networks) [see Figs. 2-5 and Abstract], the method on an intermediate

node comprising the steps of :

receiving a multicast packet (i.e., receiving multicast packet) [see Col. 11, Line

60 to Col. 12, Line 15];

determining one or more "next hops" for forwarding the packet (i.e., determining

where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13, Line 9];

replicating the packet for each "next hop" (i.e., messages or multicast packets

are replicated when the tree branches) [see Col. 6, Lines 12-22]; and

forwarding one copy of the packet to each of the "next hops" (i.e., copying an incoming multicast packet onto each of its going tree links) [see Col. 6, Lines 12-22 and Col. 13, Lines 36-45].

Haggerty does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Haggerty does suggest the use of multicasting in transmission of messages/packets over the Internet such as transmission of corporate messages to employees and video/audio conferencing [see Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 10, Haggerty teaches the method as defined in claim 8 with all

of the steps such as determining one or more "next hops" for forwarding the packet (i.e.,

determining where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13, Line

9], replicating the packet for each "next hop" (i.e., messages or multicast packets are

replicated when the tree branches) [see Col. 6, Lines 12-22], and forwarding one copy

of the packet to each of the "next hops" (i.e., copying an incoming multicast packet onto

each of its going tree links) [see Col. 6, Lines 12-22 and Col. 13, Lines 36-45]. In

addition, Haggerty further teaches multicasting of different types of packets across the

networks [see Col. 11, Lines 45-67 and Col. 12, Lines 30-31 and Figs. 4-5]. This

suggests that multiple packets are processed and sent across the network from one hop

to the next. Therefore, the determining, replicating and forwarding steps are repetitively

executed for each newly received packet.


Regarding claim 13, Haggerty teaches a computer readable medium including

instructions for distributing packets or messages efficiently across a network of

information processing units (= Mcast Hosts) and intermediate nodes (= Mcast

Routers/Switches) (i.e., multicasting packets across switch/router networks) [see Figs.

2-5 and Abstract], the computer readable medium comprising instructions for :

receiving a packet containing address information for a list of destinations (i.e.,

receiving multicast packet with destination IP address of a multicast group) [see Col. 11,

Line 60 to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12];

determining the "next hop" for each of those destinations (i.e., determining where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13, Line 9]; and

replicating the packet for each "next hop" (i.e., messages or multicast packets are replicated when the tree branches) [see Col. 6, Lines 12-22].

Haggerty does not explicitly teach distributing electronic mail message across the network using multicast technique. However, Haggerty does suggest the use of multicasting in transmission of messages/packets over the Internet such as transmission of corporate messages to employees and video/audio conferencing [see Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor, discloses multicasting technique is well-known in the art for transmitting data messages such as e-mail messages to selected groups of users across the network like the Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to allow more users to easily create and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer cost savings in network resources since network processing and bandwidth are conserved by transmitting a single copy of messages/packets over a distribution tree that branches out to destinations across the network.

Regarding claim 14, Haggerty further teaches the computer readable medium as defined in claim 13, further comprising the instruction for :

forwarding a copy of the packet to each "next hop" (i.e., copying an incoming multicast packet onto each of its going tree links) [see Col. 6, Lines 12-22 and Col. 13, Lines 36-45].

Regarding claim 15, Haggerty teaches the computer readable medium as defined in claim 14 with instructions for carrying out all of the steps such as receiving a packet containing address information for a list of destinations (i.e., receiving multicast packet with destination IP address of a multicast group) [see Col. 11, Line 60 to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12], determining the "next hop" for each of those destinations (i.e., determining where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13, Line 9], and replicating the packet for each "next hop" (i.e., messages or multicast packets are replicated when the tree branches) [see Col. 6, Lines 12-22]. In addition, Haggerty further teaches multicasting of different types of packets across the networks [see Col. 11, Lines 45-67 and Col. 12, Lines 30-31 and Figs. 4-5]. This suggests that multiple packets are processed and sent across the network from one hop to the next. Therefore, the determining, replicating and forwarding steps are repetitively executed for each newly received packet.

Regarding claim 17, Haggerty teaches an intermediate node for distributing

packets or messages efficiently across a network of information processing units (=

Mcast Hosts) and intermediate nodes (=Mcast Routers/Switches) (i.e., multicasting

packets across switch/router networks) [see Figs. 2-5 and Abstract], the intermediate

node comprising :

a reception unit for receiving a packet containing address information for a list of

destinations (i.e., receiving multicast packet with destination IP address of a multicast

group) [see Col. 11, Line 60 to Col. 12, Line 15 and Col. 12, Line 55 to Col. 13, Line 12];

a determination unit for determining the "next hop" for each of the destinations

(i.e., determining where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13,

Line 9]; and

a copying unit for replicating the packet for each of the "next hops" (i.e.,

messages or multicast packets are replicated when the tree branches) [see Col. 6,

Lines 12-22].

Haggerty does not explicitly teach distributing electronic mail message across the

network using multicast technique. However, Haggerty does suggest the use of

multicasting in transmission of messages/packets over the Internet such as

transmission of corporate messages to employees and video/audio conferencing [see

Col. 7, Lines 5-20]. This implies that there are some forms of electronic messages

involved in transmission/reception in the network.

Hardjono, in the same field of messages/packets multicasting endeavor,

discloses multicasting technique is well-known in the art for transmitting data messages

such as e-mail messages to selected groups of users across the network like the

Internet [see Hadjono, Abstract and Col. 1, Lines 13-25]. It would have been obvious to

one of ordinary skill in the art at the time of the invention was made to incorporate

multicasting technique for e-mail messages, disclosed by Hadjono, into the transmission

of multicast messages/packets across the network of information processing units and

intermediate nodes disclosed by Haggerty, in order to allow more users to easily create

and join multicasting sessions [see Hadjono, Col. 1, Lines 13-25]. Thus, it would offer

cost savings in network resources since network processing and bandwidth are

conserved by transmitting a single copy of messages/packets over a distribution tree

that branches out to destinations across the network.


Regarding claim 18, Haggerty further teaches the intermediate node as defined

in claim 17, further comprising :

a forwarding unit for forwarding a copy of the packet to each of the "next hops"

(i.e., copying an incoming multicast packet onto each of its going tree links) [see Col. 6,

Lines 12-22 and Col. 13, Lines 36-45].


Regarding claim 19, Haggerty further teaches the intermediate node as defined

in claim 18 such as a reception unit for receiving a packet containing address

information for a list of destinations (i.e., receiving multicast packet with destination IP

address of a multicast group) [see Col. 11, Line 60 to Col. 12, Line 15 and Col. 12, Line

55 to Col. 13, Line 12], a determination unit for determining the "next hop" for each of

the destinations (i.e., determining where the packet gets routed to next) [see Col. 12, Line 55 to Col. 13, Line 9], and a copying unit for replicating the packet for each of the "next hops" (i.e., messages or multicast packets are replicated when the tree branches) [see Col. 6, Lines 12-22]. In addition, Haggerty further teaches multicasting of different types of packets across the networks [see Col. 11, Lines 45-67 and Col. 12, Lines 30-31 and Figs. 4-5]. This suggests that multiple packets are processed and sent across the network from one hop to the next. Therefore, the determining, replicating and forwarding steps are repetitively executed for each newly received packet.

6.     Claims 2, 4, 7, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haggerty et al (Hereafter, Haggerty), U.S. Pat. No. 6,331,983 in view of Hardjono, U.S. Pat. No. 6,643,773 and further in view of Boivie et al, "Small Group Multicast : A New Solution for Multicasting on the Internet", IEEE, May-June 2000 (Hereafter, SGM).

Regarding claim 2, Haggerty and Hardjono do not explicitly teach the method as defined in claim 1, wherein the reliable multicast technique comprises a reliable small group multicast technique. However, Haggerty does suggest the use of the Internet Group Management Protocol (IGMP) for managing requests to join a multicast group(s) and receive multicast traffic [see Col. 3, Lines 21-29 and Col. 4, Lines 56-61].

SGM, in the same field of messages/packets multicasting endeavor, discloses the use of multicasting data transmission with Small Group Multicast (SGM) scheme [see SGM, Page 75, third column and Page 77]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate small group

multicast technique, disclosed by SGM, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to support data multicasting to a fairly small

group of only a few parties and thus improve the scalability of large scale groups

involving multicasting process [see SGM, Page 75, third column and Page 78].


Regarding claim 4, Haggerty and Hardjono do not explicitly teach the information

processing unit as defined in claim 3, wherein the reliable multicast technique

comprises a reliable small group multicast technique. However, Haggerty does suggest

the use of the Internet Group Management Protocol (IGMP) for managing requests to

join a multicast group(s) and receive multicast traffic [see Col. 3, Lines 21-29 and Col. 4,

Lines 56-61].

SGM, in the same field of messages/packets multicasting endeavor, discloses

the use of multicasting data transmission with Small Group Multicast (SGM) scheme

[see SGM, Page 75, third column and Page 77]. It would have been obvious to one of

ordinary skill in the art at the time of the invention was made to incorporate small group

multicast technique, disclosed by SGM, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to support data multicasting to a fairly small

group of only a few parties and thus improve the scalability of large scale groups

involving multicasting process [see SGM, Page 75, third column and Page 78].

Regarding claim 7, Haggerty and Hardjono do not explicitly teach the computer readable medium as defined in claim 6, wherein the reliable multicast technique comprises a reliable small group multicast technique. However, Haggerty does suggest the use of the Internet Group Management Protocol (IGMP) for managing requests to join a multicast group(s) and receive multicast traffic [see Col. 3, Lines 21-29 and Col. 4, Lines 56-61].

SGM, in the same field of messages/packets multicasting endeavor, discloses the use of multicasting data transmission with Small Group Multicast (SGM) scheme [see SGM, Page 75, third column and Page 77]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate small group multicast technique, disclosed by SGM, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to support data multicasting to a fairly small group of only a few parties and thus improve the scalability of large scale groups involving multicasting process [see SGM, Page 75, third column and Page 78].

Regarding claim 9, Haggerty and Hardjono do not explicitly teach the method as defined in claim 8 wherein the determining, replicating and forwarding steps operate according to a small group multicast scheme. However, Haggerty does suggest the use of the Internet Group Management Protocol (IGMP) for managing requests to join a multicast group(s) and receive multicast traffic [see Col. 3, Lines 21-29 and Col. 4, Lines 56-61].

SGM, in the same field of messages/packets multicasting endeavor, discloses

the use of multicasting data transmission with Small Group Multicast (SGM) scheme

[see SGM, Page 75, third column and Page 77]. It would have been obvious to one of

ordinary skill in the art at the time of the invention was made to incorporate small group

multicast technique, disclosed by SGM, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to support data multicasting to a fairly small

group of only a few parties and thus improve the scalability of large scale groups

involving multicasting process [see SGM, Page 75, third column and Page 78].


Regarding claim 12, Haggerty and Hardjono do not explicitly teach the method as

defined in claim 8, wherein the multicast packet comprises a small group multicast

packet. However, Haggerty does suggest the use of the Internet Group Management

Protocol (IGMP) for managing requests to join a multicast group(s) and receive

multicast traffic [see Col. 3, Lines 21-29 and Col. 4, Lines 56-61].

SGM, in the same field of messages/packets multicasting endeavor, discloses

the use of multicasting data transmission with Small Group Multicast (SGM) scheme

[see SGM, Page 75, third column and Page 77]. It would have been obvious to one of

ordinary skill in the art at the time of the invention was made to incorporate small group

multicast technique, disclosed by SGM, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to support data multicasting to a fairly small

group of only a few parties and thus improve the scalability of large scale groups

involving multicasting process [see SGM, Page 75, third column and Page 78].

Therefore, the multicast packet comprises a small group multicast packet for supporting

small group multicast scheme.


7.      Claims 5, 11, 16 and 20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Haggerty et al (Hereafter, Haggerty), U.S. Pat. No. 6,331,983 in view

of Hardjono, U.S. Pat. No. 6,643,773 and further in view of Provino et al (Hereafter,

Provino), U.S. Pat. No. 6,269,085.

Regarding claim 5, Haggerty and Hardjono do not explicitly teach the information

processing unit as defined in claim 3, wherein the transmission unit operates according

to a communication protocol to process ACKs and NAKs as well as packet

retransmissions. However, Hardjono does suggest the use of acknowledgments

received from neighbor nodes [see Hardjono, Col. 17, Lines 39-54].

Provino, in the same field of messages/packets multicasting endeavor, discloses

the use of multicasting data transmission with Acknowledgments (ACKs) and Negative

Acknowledgments (NACKs) and retransmission of data packets [see Provino, Col. 1,

Lines 10-21]. It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to incorporate processing ACK and /or NACK and performing

packet retransmissions, disclosed by Provino, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to indicate whether data packets were correctly

received or need to be retransmitted [see Provino, Col. 2, Lines 5-11]. Thus, it would

offer a more reliable multicasting of packets/messages in the network.


Regarding claim 11, Haggerty and Hardjono do not explicitly teach the method as

defined in claim 8, further comprising the steps of processing ACKs and/or NAKs and

performing packet retransmissions. However, Hardjono does suggest the use of

acknowledgments received from neighbor nodes [see Hardjono, Col. 17, Lines 39-54].

Provino, in the same field of messages/packets multicasting endeavor, discloses

the use of multicasting data transmission with Acknowledgments (ACKs) and Negative

Acknowledgments (NACKs) and retransmission of data packets [see Provino, Col. 1,

Lines 10-21]. It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to incorporate processing ACK and /or NACK and performing

packet retransmissions, disclosed by Provino, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to indicate whether data packets were correctly

received or need to be retransmitted [see Provino, Col. 2, Lines 5-11]. Thus, it would

offer a more reliable multicasting of packets/messages in the network.


Regarding claim 16, Haggerty and Hardjono do not explicitly teach the computer

readable medium as defined in claim 15, further comprising the instructions for

processing ACKs and/or NAKs and handling packet retransmissions. However,

Hardjono does suggest the use of acknowledgments received from neighbor nodes [see Hardjono, Col. 17, Lines 39-54].

Provino, in the same field of messages/packets multicasting endeavor, discloses the use of multicasting data transmission with Acknowledgments (ACKs) and Negative Acknowledgments (NACKs) and retransmission of data packets [see Provino, Col. 1, Lines 10-21]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate processing ACK and /or NACK and performing packet retransmissions, disclosed by Provino, into the transmission of multicast messages/packets across the network of information processing units and intermediate nodes disclosed by Haggerty, in order to indicate whether data packets were correctly received or need to be retransmitted [see Provino, Col. 2, Lines 5-11]. Thus, it would offer a more reliable multicasting of packets/messages in the network.

Regarding claim 20, Haggerty and Hardjono do not explicitly teach the intermediate node as defined in claim 19, further comprising an acknowledge unit for processing ACKs and/or NAKs and a retransmit unit for handling packet retransmissions. However, Hardjono does suggest the use of acknowledgments received from neighbor nodes [see Hardjono, Col. 17, Lines 39-54].

Provino, in the same field of messages/packets multicasting endeavor, discloses the use of multicasting data transmission with Acknowledgments (ACKs) and Negative Acknowledgments (NACKs) and retransmission of data packets [see Provino, Col. 1, Lines 10-21]. It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to incorporate processing ACK and /or NACK and performing

packet retransmissions, disclosed by Provino, into the transmission of multicast

messages/packets across the network of information processing units and intermediate

nodes disclosed by Haggerty, in order to indicate whether data packets were correctly

received or need to be retransmitted [see Provino, Col. 2, Lines 5-11]. Thus, it would

offer a more reliable multicasting of packets/messages in the network.

### *Other References Cited*

8.      The following references cited by the examiner but not relied upon are

considered pertinent to applicant's disclosure.

A)  Kristol et al, U.S. Pat. No. 5,541,927, discloses method of multicasting using

transport layer protocols suitable for use in ATM networks.

B)  Crawley, U.S. Pat. No. 6,321,270, discloses method and system for controlling a

multicast session in a network having multiple network nodes.

C)  Aras et al, U.S. Pat. No. 5,862,329, discloses method and system for

multicasting audio visual material in a conferencing.

D)  Aggarwal et al, U.S. Pat. No. 6,154,463, discloses method and system for

multicast conferencing and online discussion groups suitable for stationary and/or

mobile group members.

E)  Gupta et al, U.S. Pat. No. 6,577,599, discloses method and system for efficient

and small-scale reliable multicasting in a network environment.

F)  Klinker, "Multicast tree construction in directed networks", IEEE 1996, discloses

multicast distribution trees in the networks.

H) Braun, "Multicast for Small Conference", IAM-00-008, July 2000, discloses

scalable multicast communications for small conferencing groups in the Internet.


9.    A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS ACTION IS

SET TO EXPIRE THREE MONTHS, OR THIRTY DAYS, WHICHEVER IS LONGER,

FROM THE MAILING DATE OF THIS COMMUNICATION.  FAILURE TO RESPOND

WITHIN THE PERIOD FOR RESPONSE WILL CAUSE THE APPLICATION TO

BECOME ABANDONED (35 U.S.C. § 133).  EXTENSIONS OF TIME MAY BE

OBTAINED UNDER THE PROVISIONS OF 37 CAR 1.136(A).


10.    Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Philip Tran whose telephone number is (703) 308-8767.

The Group fax phone number is (703) 872-9306.

     If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hosain T. Alam, can be reached on (703) 308-6662.

     Any inquiry of a general nature or relating to the status of this application should

be directed to the Group receptionist whose telephone number is (703) 305-3900.


Philip B. Tran
Art Unit 2155
Jan 08, 2004